

The Sexual Behavior of US Adults: Results from a National Survey

ABSTRACT

Objectives. One consequence of the acquired immunodeficiency syndrome (AIDS) epidemic has been to highlight the need for population-based estimates of the numbers of individuals engaging in sexual behaviors that place them at risk for human immunodeficiency virus (HIV) infection. This paper describes the prevalence of various sexual behaviors in a nationally representative sample of adults in the United States.

Methods. Data were collected as part of a household probability survey of adults ($n = 2058$) in the United States. Data collected on sexual behavior included sexual orientation, frequency of intercourse, condom use, and number of sexual partners.

Results. Nearly all respondents were sexually experienced. Of those who were currently sexually active, 13% (1% of married respondents) had had sex with more than one partner in the previous year. Of those reporting having intercourse with more than one partner in the previous year, 7% used condoms consistently and 23% used condoms consistently with their casual partners.

Conclusions. A significant proportion of individuals were found to have intercourse with multiple partners without using condoms. A minority of these respondents acknowledged that their behavior may place them at risk for HIV transmission. (*Am J Public Health.* 1993;83:1400-1408)

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Introduction

Considering the wide range of sex-related issues that are of great social and public health concern today (acquired immunodeficiency syndrome [AIDS] and other sexually transmitted diseases, unwanted pregnancy, etc.) the need for data on sexual habits and behaviors in the general population is of considerable importance. Particularly crucial are data on sexual behaviors relevant to AIDS infection.¹ Information on these behaviors is necessary not only for mathematical modeling of human immunodeficiency virus (HIV) transmission² but for understanding the cultural context of sexual activity in order to inform educational efforts to prevent AIDS.^{3,4} Yet such data on the US population are sorely lacking. For example, the distribution of the number of sexual contacts (both current and new partners) among individuals in the US population is currently unknown.⁵ This lack of current data has meant that public health officials have often been forced to use data collected by Kinsey and colleagues⁶ in their estimates of the number of individuals currently infected with HIV, despite the fact that these data are now more than 40 years old and fraught with a number of important limitations, including problems of sampling and interview design.⁵

Since the time of the original Kinsey studies, there have been a number of important surveys of sexual activity of both adults⁷⁻⁹ and adolescents.¹⁰⁻¹⁴ In general, there is reasonably good information currently available on patterns of sexuality among adolescents, rates of intercourse in marriage,⁵ and reproductive behavior of women.¹⁵ However, the majority of surveys of sexual behavior in adults have a variety of problems that limit their usefulness in drawing conclusions relevant to HIV transmission. First, many surveys of

sexual behavior have studied samples that may not be representative of the general population. Existing studies have sampled a variety of special populations, including college students,^{16,17} magazine subscribers,¹⁸⁻²⁰ arrestees at a county jail,²¹ and volunteer or recruited samples,²² and probability methods have rarely been used to sample from these subpopulations.

Second, those studies that have used probability methods to sample general population respondents have often included only limited measures of sexual behavior (see Turner et al.⁵ and Smith²³ for review). For example, the focus of a 1970 Kinsey survey was more on attitudes and beliefs about sexuality than on actual behaviors, and respondents were asked only a few questions about premarital sexuality and number of premarital partners of both sexes.^{8,24} The General Social Survey of 1989 included items measuring age at first intercourse and number of premarital sexual partners.⁷ Neither the Kinsey study nor the General Social Survey included information about actual behaviors, such as vaginal or anal intercourse or frequency of condom use. National data on condom use is limited to samples of women and adolescent males, and the data from women focus on condom use not for disease prevention but for protection against pregnancy.²⁵

Drawing conclusions from surveys of sexual behavior is difficult because of the different types of instrumentation and methods used.^{1,2} Despite the limitations of these studies, they do provide important

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evidence to suggest that substantial numbers of individuals may be placing themselves at risk for infection with the AIDS virus. For example, a recent study by the National Opinion Research Center⁹ found that 44% of unmarried men and 17% of unmarried women aged 18 through 24 years reported having three or more sexual partners in the year prior to the interview. A survey of a single San Francisco Bay Area county found that 16% of all men, 9% of all women, and 29% of all respondents aged 18 through 24 years had had three or more sexual partners in the previous year.²⁶ An analysis of a telephone survey in Los Angeles found that condom purchases among respondents with multiple partners were low: 45% of men with nine or more partners and 65% of women with three or more partners reported no condom purchases during the previous year.²⁷

This paper presents data from a recent survey of a nationally representative sample of adults in the United States. Unlike previous studies of sexual behavior that used national probability samples,^{7,8} the survey interview included detailed measures of a number of different parameters of sexuality, including number of partners, condom use, and frequency of both risky and "safer" sexual behaviors. These results may be helpful in estimating baseline levels of sexual practices, particularly sexual practices that are associated with the risk of HIV infection, in the general population.

Methods

Subjects and Procedure

Data were collected as part of a survey of a multistage area probability sample of the adult household population of the 48 contiguous United States. Fieldwork for the survey was conducted by the Institute for Survey Research at Temple University between January and July of 1990. The sample consisted of 3277 randomly selected housing units in 100 primary sampling units. Because 348 of the listed units were not valid housing units or were vacant, the final sample size was 2929 housing units. A total of 2058 individuals were interviewed, representing a 70.3% response rate.

All interviews were conducted in person by experienced survey interviewers who received 3 days of training on this instrument. Interviews were conducted in the homes of most respondents, although other arrangements were sometimes made

to ensure maximum privacy. At the beginning of the interview with the designated respondent, an informed consent was read that gave details on the topics to be covered (including alcohol and drug use and sexual behavior) and included confidentiality assurances. All questions about sexual activity were contained in a 20-page self-administered questionnaire. Respondents filled out this booklet themselves and placed it in a sealed envelope that was collected by the interviewer. Respondents were sent \$10 for their participation.

Materials

The instrument consisted of both orally administered and self-administered segments. The self-administered questionnaire was administered at the end of the session; thus, questionnaire items on sexual behavior were answered last.

Demographics. Standard demographic measures included sex, age, marital status, race, and educational level.

Sexual experience. Respondents were asked whether they had ever had sexual intercourse (vaginal or anal) and whether they had had intercourse in the last 5 years. Other questionnaire items asked respondents to indicate the number of sexual partners (not identified by sex) they had had in the last 5 years, 12 months, and 30 days, and to indicate their self-identified sexual orientation (heterosexual, bisexual, or homosexual).

Frequency of intercourse and condom use with primary partners. One questionnaire item asked respondents to indicate how often they had had intercourse in the last 12 months with a primary partner (defined as "a person to whom you are married or someone to whom you feel committed above anyone else"). For these items, seven response categories were given (Not at all, Less than once a month, About once a month, Two or three times a month, Once or twice a week, Three or four times a week, Every day or nearly every day). The next question asked how often the respondent had used a condom during intercourse (Not at all, Less than half the time, About half the time, More than half the time, Nearly every time, Every time).

Frequency of intercourse and condom use with nonprimary partners. The same two items about frequency of intercourse and condom use were repeated with reference to nonprimary partners, defined as any partners other than primary partners, including casual acquaintances,

new partners, one-night stands, and sex for pay.

Most recent sexual encounter with a new partner. Respondents were asked a number of questions about the most recent time they had had sex with someone they had never had sex with before, including use of contraception (including condoms).

AIDS attitudes, beliefs, and subjective risk. Respondents were asked what they thought the chances were that they had been infected with HIV and that they would be infected with HIV in the next few years (5-point scales with endpoints No chance at all and A very strong chance). Other items, all using 5-point scales, asked respondents (1) how afraid, threatened, and worried they felt about the possibility of getting AIDS (endpoints Not at all and Extremely); (2) how much impact the risk of AIDS had had on their sexual behavior (endpoints None and An extreme amount); and (3) how risky they believed their behavior was in terms of AIDS (endpoints Don't know and Very risky).

Statistical Analyses

Differences in proportions were analyzed with chi-square tests with post hoc partitioning to test for differences among demographic groups. Partitioning included appropriate adjustments of degrees of freedom used for post hoc tests.²⁸

Results

Characteristics of the sample are presented in Table 1. Percentages reported in this paper are based on a weighting of the sample to attain representativeness of the national adult population. Because all housing units were selected with equal probabilities, it is not necessary to compensate with weights for unequal probabilities of selection of housing units. However, unequal probabilities of selection were introduced during the process of selecting individual housing unit members. These unequal probabilities were compensated for with separate weights, with a poststratification weight included based on a comparison of the sample and census data. A design effect was also included to compensate for the restricted sample variance resulting from cluster sampling. The formula $n_{Deff} = n/Deff$ reduced the effective n 's to adjust for design effects. The n 's reported in tables are based on the unweighted sample; statistical comparisons use weighted n 's.

TABLE 1—Sample Characteristics (Weighted Percentages)

	SAQ Sample ^a	SAQ Refusals ^b	SAQ Mostly Incomplete ^c	Total No SAQ ^d
Sex				
Male	48	52	48	51
Female	52	48	52	49
Age, y				
18–29	28	13	8	11
30–39	23	19	18	18
40–49	16	13	12	13
50–59	11	12	10	11
60–69	12	15	24	19
≥70	10	28	30	29
Race				
White	76	55	66	60
Black	13	20	16	18
Asian	3	14	8	12
Hispanic	9	10	8	9
Other	1	1	1	1
Marital status				
Married	58	68	72	70
Living with someone	5	1	1	1
Separated	3	2	3	2
Divorced	8	4	6	5
Widowed	7	10	14	12
Never married	20	15	4	10
Education				
Not a high school graduate	21	39	43	41
High school graduate	39	37	38	38
Some college	40	18	18	22
Unweighted n	1907	83	68	151

^aExcludes the 151 respondents with missing or incomplete information on the self-administered questionnaire (SAQ) from the entire sample.
^bRespondents who did not complete the self-administered questionnaire.
^cRespondents missing 17 or more of 19 core items on the self-administered questionnaire.
^dIncludes respondents who refused to answer self-administered questionnaire and those missing 17 or more items.

rates of 13% to 14%). Although such moderate levels of nonresponse do present a problem for our prevalence estimates, we note that item nonresponse rates in this study were no higher, and in some cases were lower, than rates in other surveys that have used self-administered questionnaires.²⁹ In an extensive analysis of nonresponse to self-administered questions on sexual behavior in the General Social Survey, Smith concluded that nonresponse bias was negligible in that nonresponse did not appear to be related to those individual difference variables most closely related to sexual behavior but instead to more general response tendencies such as uncooperativeness and low cognitive ability.²⁹ Although our questionnaire did not include many of the individual difference variables of the General Social Survey, the pattern of nonresponse by demographic variables was quite similar to that found by Smith.²⁹ Furthermore, as discussed below, the estimates that we derived conform closely to those of other studies.

Sexual Activity Patterns

Ninety-eight percent of the sample reported that they were heterosexual. Data are not presented separately by sexual orientation because of the very small number of homosexual and bisexual respondents. A separate analysis of heterosexual respondents only did not result in any changes in the figures we report here. Data on respondents' current sexual activity and frequency of intercourse are presented in Table 2.

Current sexual activity. The great majority of respondents (95%) reported having some sexual experience (column 1 of Table 2), and the majority (90%) reported having sex in the previous 5 years (column 2 of Table 2). As seen in the second column of Table 2, men, younger respondents, married or cohabiting respondents, and those who were more well educated were more likely to be sexually active.

Frequency of intercourse. Among respondents who reported having sex in the past 12 months, 70% reported having intercourse at least once per week (see Table 2). Frequency of intercourse did not differ by gender, race, or education. The highest frequency of intercourse was reported by respondents younger than 30 years, never-married respondents, and those living with a partner.

Number of sexual partners. Data on the number of reported sexual partners in the last 5 years, 12 months, and 30 days

Nonresponse

Eighty-three respondents did not complete the self-administered questionnaire. In eleven of these cases, the respondent could not read; the other 72 cases were refusals, for a refusal rate of 3.5%. To investigate the potential bias induced by nonresponse, we examined the characteristics of two kinds of nonresponders: those who refused the self-administered questionnaire altogether ($n = 83$) and those who filled out the questionnaire but were missing data on 17 or more of the 19 questions on current sexual activity ($n = 68$). These two groups of nonresponders did not differ significantly from each other on the demographic variables presented in Table 1 (all P 's $> .05$); the two groups were therefore pooled (rightmost column of Table 1). Compared with those with more complete questionnaire data, nonresponders were more likely to be non-White, less well educated, widowed, and older than the sample as a whole. The same characteristics discriminated re-

sponders from nonresponders in the General Social Survey.²⁹ It is possible that those respondents (the elderly and the widowed) who are less likely to be sexually active tended to skip questions that they felt did not apply to them²⁹; alternatively, these respondents may be less willing to report on their sexual behavior. All subsequent analyses report data only from the 1907 respondents with self-administered questionnaire data.

Item nonresponse rates for the sexual behavior measures varied from 4% for a question asking "Have you ever had sexual intercourse?" to 14% for items about frequency of condom use. (The high item nonresponse rates for condom use questions may be due partially to a confusing method of presentation. These items were part of a two-page series with a rather complex skip pattern and multiple arrows. Respondents may have answered the first question in the series [item nonresponse rate of 8%] and then given up; subsequent items in this series all had nonresponse

TABLE 2—Sexual Activity and Frequency of Intercourse (Weighted Percentages, Unweighted n's)

	Sexual Activity				Frequency of Intercourse in Last Year ^b					
	Ever Had Sex	(Base n)	Sex in Last 5 Years ^a	(Base n)	Never	1 Time/ Month	2 Times/ Month	1–2 Times/ Week	3–4 Times/ Week	Daily (Base n)
All	94.5	(1877)	89.4	(1795)	10.5	12.2	18.0	32.8	20.0	6.5 (1472)
Sex										
Male	94.5	(791)	95.0	(754)	10.3	13.3	18.3	33.5	19.3	5.2 (668)
Female	94.4	(1086)	84.3	(1041)	10.7	11.1	17.6	32.0	20.7	7.9 (804)
Age, y										
18–29	86.9	(427)	98.9	(385)	6.9	6.1	12.6	31.0	29.1	14.3 (364)
30–39	97.7	(481)	97.8	(468)	7.1	7.8	18.7	36.2	24.1	6.1 (433)
40–49	98.6	(310)	95.5	(305)	11.0	10.8	18.7	38.2	18.5	2.9 (281)
50–59	97.9	(210)	92.7	(205)	13.4	18.9	20.2	34.9	10.4	2.2 (178)
60–69	95.8	(239)	74.6	(229)	15.8	25.8	28.8	22.6	6.6	0.4 (148)
≥70	95.9	(207)	44.7	(200)	31.1	32.1	16.2	19.0	1.5	... (66)
Race										
White	95.1	(1454)	88.7	(1397)	10.2	12.8	19.6	32.6	19.5	5.3 (1138)
Black	95.1	(233)	92.7	(222)	11.1	8.3	11.4	36.1	24.9	8.3 (184)
Other	90.1	(190)	90.7	(176)	11.5	12.9	14.8	30.4	18.2	12.2 (150)
Marital status										
Married	98.6	(1004)	96.4	(991)	7.0	12.5	21.0	36.4	19.1	4.1 (918)
Living with someone	99.1	(80)	98.3	(79)	6.9	6.5	11.7	20.6	37.5	16.8 (75)
Separated	98.4	(78)	84.0	(77)	11.0	13.8	15.3	37.1	15.6	7.2 (57)
Divorced	98.9	(206)	78.8	(204)	20.6	15.4	13.3	23.4	19.9	7.4 (155)
Widowed	98.4	(188)	28.6	(187)	65.9	13.1	5.1	12.1	...	3.8 (43)
Never married	77.6	(320)	94.4	(256)	13.2	11.3	12.8	28.7	21.5	12.5 (223)
Education										
Not a high school graduate	92.7	(369)	76.0	(347)	18.3	10.2	17.3	28.0	19.8	6.3 (219)
High school graduate	95.0	(716)	92.1	(689)	8.9	13.6	15.8	34.8	20.7	6.1 (578)
Some college	94.6	(757)	93.7	(724)	8.7	12.1	20.3	33.0	19.1	6.8 (646)

Note. Base n's may vary because of missing data.

^aIncludes only those respondents who ever had sex.

^bExcludes respondents not sexually active within the last five years.

are presented in Table 3 (this table includes only respondents who reported having had sex in the last 5 years). The majority of respondents reported having only one sexual partner in all three time periods, although number of partners increased with increasing length of time period: 2.9% of respondents reported more than one sexual partner in the previous 30 days, whereas this percentage was 13.3% for the previous 12 months and 31.4% for the previous 5 years. Respondents younger than 40 years, men, and divorced and never-married respondents were the most likely to report having had more than one sexual partner in the past year and in the past 5 years.

Among married respondents only (Table 4), the vast majority reported having only one sexual partner during the previous 30 days (98.8%), 12 months (96.3%), and 5 years (93.6%). The small numbers of respondents reporting any extramarital sex makes any statistical comparisons problematic, so that the apparent trends for extramarital sex to be more common

among younger respondents and male respondents did not reach statistical significance. The finding that reported extramarital sex was more common ($P < .05$) among Black than White respondents should be interpreted with caution, given that non-Whites were not oversampled to yield sufficient numbers for group analyses.

Condom Use and Higher Risk Activity

To describe an overall sexual risk typology, we used a variant of a categorization scheme developed by the Chicago Multi-Center AIDS Cohort Study group that predicts HIV seroconversion over time among gay and bisexual men.³⁰ We modified the scale to expand risk-group definition beyond involvement in receptive anal intercourse. The resulting typology has five categories based on the respondent's behavior in the past 12 months: (1) respondent had no sex in the previous 12 months; (2) respondent reported only one sexual partner and always

used condoms during intercourse; (3) respondent reported only one partner and did not always use condoms; (4) respondent reported more than one partner and always used condoms; and (5) respondent reported more than one partner and did not always use condoms.

The left-hand portion of Table 5 shows the results of this typology for all respondents. Women, respondents older than 60 years or younger than 30 years, respondents who were not married or living with a partner, and those with less than a high school education were less likely to have had sex in the last 12 months; thus, they were more likely to appear in the lowest-risk category. Male respondents, those younger than 40 years, and divorced, separated, and never-married respondents were more likely to be in the highest risk group.

The right-hand portion of Table 5 includes only those respondents who had had sex in the previous 12 months. The majority of these sexually active respondents (77%) fell into the single partner/no

TABLE 3—Number of Sexual Partners in Past 30 Days, Past Year, and Past 5 Years^a (Weighted Percentages, Unweighted n's)

	Past 30 Days					Past Year					Past 5 Years				
	0	1	2-4	≥5	(Base n)	0	1	2-4	≥5	(Base n)	0	1	2-4	≥5	(Base n)
All	14.8	82.3	2.2	0.7	(1494)	5.8	80.9	11.4	1.9	(1498)	0.5	68.2	20.8	10.6	(1510)
Sex															
Male	14.2	81.4	3.4	1.0	(677)	5.7	77.4	13.7	3.2	(677)	0.4	62.4	21.8	15.4	(682)
Female	15.5	83.1	1.0	0.4	(817)	5.9	84.5	9.1	0.6	(821)	0.5	74.0	19.7	5.8	(828)
Age, y															
18-29	17.1	78.5	3.9	0.5	(376)	4.3	69.8	22.8	3.1	(376)	0.8	43.1	34.8	21.4	(373)
30-39	9.4	87.3	2.7	0.7	(451)	3.5	83.7	11.4	1.4	(449)	0.5	66.2	23.6	9.7	(447)
40-49	10.6	87.9	0.8	0.6	(281)	4.2	88.3	5.9	1.6	(281)	...	78.7	15.1	6.2	(285)
50-59	14.8	84.0	0.2	1.0	(179)	6.5	89.2	3.1	1.2	(179)	0.3	88.8	8.4	2.5	(180)
60-69	20.0	76.8	1.7	1.6	(141)	8.4	86.3	3.3	1.9	(145)	...	90.6	4.8	4.6	(153)
≥70	39.8	60.2	(63)	28.1	71.9	(65)	2.2	89.8	6.9	1.1	(69)
Race															
White	13.8	84.1	1.6	0.4	(1156)	5.9	81.8	11.0	1.3	(1162)	0.4	70.2	19.9	9.5	(1166)
Black	16.1	77.8	4.9	1.2	(186)	4.8	76.5	15.6	3.1	(184)	1.1	57.8	25.2	15.8	(190)
Other	20.2	75.1	2.9	1.9	(152)	6.0	80.0	10.0	4.1	(152)	0.2	66.1	21.7	12.0	(154)
Marital status															
Married	5.9	93.0	0.9	0.2	(936)	2.4	94.0	3.2	0.3	(939)	0.4	86.0	10.8	2.7	(948)
Living with someone	1.7	97.4	...	0.9	(74)	...	82.3	16.7	1.0	(75)	1.9	41.2	40.2	16.7	(75)
Separated	44.3	51.1	4.6	...	(59)	9.2	77.3	12.1	1.4	(59)	1.6	50.9	39.8	7.7	(60)
Divorced	36.7	52.4	4.7	6.2	(156)	15.1	51.4	25.1	8.5	(155)	...	33.1	40.8	26.2	(155)
Widowed	80.5	17.7	1.8	...	(40)	60.5	25.9	11.8	1.7	(41)	...	76.3	19.0	4.7	(44)
Never married	31.0	62.0	6.5	0.4	(228)	9.3	49.7	35.6	5.5	(228)	0.4	23.9	41.4	34.3	(227)
Education															
Not a high school graduate	20.1	75.6	3.1	1.2	(217)	12.1	77.1	9.4	1.4	(218)	0.2	73.2	21.1	5.5	(222)
High school graduate	14.2	84.1	1.3	0.3	(598)	3.9	81.6	12.6	1.9	(602)	0.7	67.0	21.7	10.7	(607)
Some college	13.8	82.9	2.4	0.9	(651)	5.3	81.7	11.0	2.0	(650)	0.3	67.5	20.0	12.2	(652)

Note. Base n's may vary because of missing data.

^aExcludes respondents not sexually active in past 5 years.

TABLE 4—Currently Married Respondents Having Sex Partners Other Than Spouse in Past 30 Days, Past Year, and Past 5 Years (Weighted Percentages, Unweighted n's)

	Past 30 Days		Past Year ^a		Past 5 Years ^b	
	%	(Base n)	%	(Base n)	%	(Base n)
All	1.2	(881)	3.6	(900)	6.4	(782)
Sex						
Male	1.8	(400)	4.4	(405)	8.5	(356)
Female	0.6	(481)	2.9	(495)	4.3	(426)
Age, y						
18-29	1.4	(152)	5.9	(145)	11.7	(72)
30-39	2.6	(279)	5.8	(278)	9.6	(233)
40-49	0.0	(197)	3.2	(200)	6.8	(191)
50-59	0.9	(127)	1.6	(132)	2.6	(128)
60-69	0.0	(91)	0.0	(104)	2.0	(111)
≥70	0.0	(33)	0.0	(38)	3.5	(44)
Race						
White	0.9	(743)	2.9	(756)	5.3	(656)
Black	3.8	(62)	12.6	(64)	17.3	(57)
Other	0.2	(76)	0.2	(80)	0.8	(69)
Education						
Not a high school graduate	1.0	(104)	2.7	(111)	4.7	(109)
High school graduate	1.2	(366)	3.9	(372)	6.0	(315)
Some college	1.3	(396)	3.7	(403)	7.5	(347)

Note. Base n's may vary because of missing data.

^aIncludes only those respondents married 1 year or longer.^bIncludes only those respondents married 5 years or longer.

condom category; less than one fifth of the sample fell into the multiple partner/no condom category. Higher proportions of men, respondents younger than 30 years, non-White respondents, and unmarried respondents were categorized in this higher-risk group. The remaining two groups were very small: less than 2% of the sample reported more than one sexual partner and always using condoms and less than 4% reported one sexual partner and always using condoms.

Condom use with nonprimary partners. Given the low rates of consistent condom use, the sexual risk typology reflects mostly a categorization of individuals with respect to their number of sexual partners: nearly all respondents are in the two categories characterized by inconsistent condom use, but they are distinguished by number of sexual partners. Among respondents reporting more than one sexual partner in the previous year ($n = 271$), 8% ($n = 23$) used condoms every time they had sex. This statistic, however, does not capture whether these respondents used condoms differentially with their primary partners vs their

nonprimary partners. In a supplementary analysis, we identified those respondents who provided data on condom use with nonprimary partners ($n = 181$). Forty-one of these respondents (23%) reported using a condom every time with their nonprimary partners. These data imply that although respondents with more than one sexual partner report using condoms only rarely when all their partners are considered, their condom use with nonprimary partners is somewhat higher.

Condom use in most recent sexual encounter with new partner. Complete data on condom use in the most recent sexual encounter with a new partner (restricted to the last 5 years) were available for 655 respondents (328 men and 327 women). An additional 251 respondents (12% of the total sample) did not answer this question, and the remaining respondents did not report an encounter with a new partner in the past 5 years. (Eight percent of all respondents skipped the entire section of the questionnaire that included the questions about the most recent sexual encounter with a new partner. It seems likely that these respondents either had trouble remembering this encounter—which would have taken place long ago for long-married, monogamous individuals—or felt that it did not apply to them because of their monogamy or marital status.)

In all, 25% of respondents reported using a condom on this occasion. Logistic regression analyses predicting condom use from age, sex, and marital status showed that condom use in this event was higher among men than among women (29.7% vs 21%; odds ratio [OR] = 1.7, 95% confidence interval [CI] = 1.2, 2.5), among unmarried respondents than among married respondents (33% vs 16%; OR = 2.8, 95% CI = 1.8, 3.9) and among younger respondents than among older respondents (OR = .98, 95% CI = .96, .99).

Attitudes, Beliefs, and Subjective Risk

Table 6 presents responses to attitudinal and behavioral questions about respondents' fear of AIDS, perceptions of risk for AIDS, and the impact of AIDS on their sexual behavior, cross-tabulated with age and sexual risk group. The majority of respondents reported that their sexual behavior was safe and that fear of AIDS had not affected their sexual behavior. Mean levels of fear and worry about AIDS were relatively low, and most respondents reported little probability that

	All Respondents ^a						Sexually Active in Last Year ^a				
	1	2	3	4	5	(Base n)	2	3	4	5	(Base n)
All	22.2	3.0	59.8	1.2	13.8	(1891)	3.8	76.8	1.6	17.8	(1413)
Sex											
Men	17.6	3.4	60.3	1.9	16.9	(794)	4.1	73.1	2.3	20.5	(646)
Women	26.4	2.6	59.3	0.6	11.1	(1097)	3.6	80.5	0.8	15.1	(767)
Age, y											
18–29	19.0	4.3	48.6	1.5	26.7	(428)	5.3	59.9	1.8	32.9	(359)
30–39	9.7	3.8	70.6	2.2	13.6	(483)	4.2	78.2	2.5	15.1	(428)
40–49	11.4	1.8	76.3	0.8	9.7	(313)	2.0	86.2	0.8	11.0	(271)
50–59	18.8	3.0	69.7	1.6	6.9	(211)	3.7	85.8	2.0	8.4	(167)
60–69	37.4	1.4	54.6	...	6.6	(240)	2.3	87.2	...	10.5	(134)
70+	67.6	0.9	30.6	...	0.9	(213)	2.9	94.4	...	2.7	(51)
Race											
White	22.0	2.9	62.0	1.2	11.9	(1467)	3.8	79.5	1.5	15.2	(1090)
Black	19.1	3.5	52.6	2.7	22.1	(230)	4.4	65.0	3.3	27.3	(179)
Other	26.4	2.5	53.1	0.2	17.7	(194)	3.4	72.2	0.3	24.1	(144)
Marital status											
Married	8.9	3.0	82.5	0.1	5.6	(1012)	3.3	90.5	0.1	6.2	(927)
Living with someone	5.0	...	73.7	1.5	19.7	(80)	...	77.6	1.6	20.8	(76)
Separated	27.3	4.5	46.4	1.3	20.5	(77)	6.2	63.9	1.7	28.2	(55)
Divorced	37.5	2.7	24.8	4.1	30.8	(209)	4.4	39.7	6.6	49.3	(128)
Widowed	87.8	...	6.8	1.2	4.2	(192)	...	55.6	9.6	34.8	(22)
Never married	35.6	4.6	23.5	3.6	32.7	(320)	7.1	36.5	5.6	50.8	(204)
Education											
Not a high school graduate	40.4	0.6	45.4	1.8	11.8	(368)	0.9	76.1	3.1	19.9	(201)
High school graduate	18.2	3.0	62.1	0.7	16.0	(721)	3.7	75.9	0.9	19.6	(567)
Some college	17.1	4.0	64.5	1.5	12.8	(767)	4.9	77.8	1.8	15.5	(618)

Note. Base n's may vary because of missing data.

^aCategories are as follows:

- 1 = Sexually inactive in previous 12 months.
- 2 = One sexual partner in previous 12 months; always use condoms.
- 3 = One sexual partner in previous 12 months; inconsistently or never use condoms.
- 4 = More than one sexual partner in previous 12 months; always use condoms.
- 5 = More than one sexual partner in previous 12 months; inconsistently or never use condoms.

Note. Base n's may vary because of missing data.

^aCategories are as follows:

1 = Sexually inactive in previous 12 months.

2 = One sexual partner in previous 12 months; always use condoms.

3 = One sexual partner in previous 12 months; inconsistently or never use condoms.

4 = More than one sexual partner in previous 12 months; always use condoms.

5 = More than one sexual partner in previous 12 months; inconsistently or never use condoms.

they were infected or would become infected with HIV. However, younger respondents (particularly those younger than 40 years) were more likely to report that their behavior might be risky, that fear of AIDS had affected their behavior, and that there was some chance they were (or would be) infected with HIV. These younger respondents also showed higher levels of fear, worry, and threat with regard to AIDS.

As shown in the right-hand portion of Table 6, attitudes and beliefs about AIDS differed significantly by sexual risk group. The highest levels of reported impact of AIDS on sexual behavior, fear, threat, and worry were reported by respondents with more than one sexual partner who always used condoms (note that this group is very small). Respondents with more than one partner, whether they used condoms consistently or not, reported higher probabilities

that they were or would be infected with HIV.

Discussion

Estimates of patterns of sexual behavior, including behavior relevant to HIV transmission, were described using data from a national probability sample of adults (aged 18 years and older) in the United States. These data show that the great majority of American adults are sexually experienced, and most, except for the elderly and widowed, are currently sexually active. As other researchers have noted,^{7,9,23} the majority have had only a single sexual partner in the previous year, with an especially high fidelity rate among the married. From the standpoint of HIV transmission, this pattern suggests that most people are not placing themselves or their partners at high risk for exposure to

TABLE 6—Attitudes and Beliefs Regarding AIDS and Its Impact on Behavior (Weighted Percentages, Unweighted n's)^a

	Sex			Age, y						Condom Use and Number of Partners ^e			
	All	Male	Female	18–29	30–39	40–49	50–59	60–69	≥70	2	3	4	5
Impact of AIDS on sexual behavior^b													
Mean rating	2.2	2.2	2.2	2.7	2.3	2.0	1.8	1.4	1.4	2.4	2.0	3.5	3.1
None, %	57.3	55.3	59.4	37.8	54.9	64.3	72.4	84.7	84.5	52.3	66.8	20.6	21.4
A lot or Extreme, %	29.4	28.1	30.5	40.9	34.0	23.1	20.7	9.4	7.6	38.3	22.7	76.3	51.2
(n)	(1355)	(612)	(743)	(351)	(420)	(259)	(158)	(119)	(45)	(53)	(1031)	(23)	(248)
How risky is your sexual behavior^c													
Mean rating	1.4	1.4	1.4	1.5	1.3	1.3	1.3	1.4	1.2	1.5	1.3	1.8	1.9
Safe, %	82.8	80.4	85.3	75.5	82.8	86.9	88.9	86.6	93.7	81.8	89.9	62.8	55.2
Very risky, %	4.1	4.5	3.7	5.6	2.8	2.9	6.6	4.0	0.0	8.0	2.8	5.3	8.6
(n)	(1355)	(613)	(742)	(351)	(421)	(258)	(156)	(120)	(46)	(53)	(1030)	(23)	(249)
What chance you are infected with HIV now^b													
Mean rating	1.3	1.3	1.3	1.4	1.4	1.3	1.2	1.2	1.0	1.3	1.2	1.5	1.6
No chance, %	75.1	75.0	75.3	68.6	70.5	77.1	85.1	81.6	100.0	75.7	79.8	57.7	56.2
(n)	(1411)	(644)	(767)	(359)	(427)	(271)	(166)	(134)	(51)	(54)	(1082)	(23)	(252)
What chance of HIV infection in future^b													
Mean rating	1.4	1.5	1.4	1.5	1.5	1.4	1.5	1.3	1.2	1.3	1.4	1.7	1.7
No chance, %	66.2	64.6	67.6	63.6	63.7	65.3	66.4	73.8	83.4	70.7	69.3	55.0	52.2
(n)	(1409)	(642)	(767)	(357)	(427)	(270)	(167)	(134)	(51)	(54)	(1081)	(22)	(252)
Feelings about possibility of contracting AIDS^d													
Afraid													
Mean rating	2.4	2.3	2.4	2.8	2.3	2.2	2.2	1.9	1.5	2.6	2.2	3.2	2.9
Not at all, %	40.9	43.3	38.8	29.8	37.1	42.0	51.3	57.0	70.8	32.4	45.0	18.1	26.8
(n)	(1412)	(645)	(767)	(359)	(427)	(271)	(167)	(134)	(51)	(54)	(1082)	(23)	(253)
Threatened													
Mean rating	1.9	1.9	1.9	2.1	1.9	1.9	1.8	1.5	1.2	2.0	1.8	2.6	2.3
Not at all, %	53.5	55.4	51.5	45.3	47.6	52.4	62.4	71.4	88.1	53.3	57.5	26.9	38.7
(n)	(1411)	(644)	(767)	(359)	(427)	(270)	(167)	(134)	(51)	(54)	(1081)	(23)	(253)
Worried													
Mean	2.0	2.0	2.0	2.4	2.0	1.9	1.8	1.5	1.2	2.3	1.9	2.7	2.5
Not at all, %	49.8	52.9	46.8	39.2	44.3	48.4	61.7	71.0	84.2	41.8	54.6	20.5	33.8
(n)	(1410)	(643)	(767)	(358)	(427)	(270)	(167)	(134)	(51)	(54)	(1080)	(23)	(253)

Note. Base n's may vary because of missing data.

^aIncludes only those respondents sexually active in past 12 months.

^bScale: 1 = None, 5 = Extreme.

^cScale: 1 = Safe, 4 = Very Risky.

^dScale: 1 = Not at all, 5 = Extremely.

^eCategories are as follows:

2 = One sexual partner in previous 12 months; always use condoms.

3 = One sexual partner in previous 12 months; inconsistently or never use condoms.

4 = More than one sexual partner in previous 12 months; always use condoms.

5 = More than one sexual partner in previous 12 months; inconsistently or never use condoms.

HIV through sex with multiple partners.⁹ Likewise, the 23% of adults who are sexually inactive are (currently) immune to receiving or transmitting AIDS through their sexual behavior.²³ However, these data suggest that some proportion of the population (18% of those sexually active in this sample; 14% of the total sample) may engage in unprotected intercourse with more than one partner. Among the groups most likely to be represented in this higher-risk category are males, those younger than 30

years, and people who have never been married or who are divorced.

Many of the parameters estimated from our sample are consistent with those calculated from other representative samples. For example, 2% of the sample identified themselves as homosexual or bisexual; this is consistent with estimates calculated from the 1970 Kinsey survey, which used a more detailed set of questions.²⁴ Consistent with the findings of the General Social Survey,^{9,23,31} having

more than one sexual partner in the previous year was more common among men, the unmarried, and younger respondents.

Note that having multiple sexual partners over a certain time period does not necessarily imply infidelity. People who report having more than one partner over a long enough time period may be practicing "serial monogamy," being sexually faithful to each partner in turn. This hypothesis is supported by the fact that

among the respondents in this sample who had had more than one partner in the previous 12 months, 85% indicated that all of their partners were primary partners (defined as partners "who you are married to or to whom you feel committed above anyone else"). Of respondents with more than one partner in the previous 5 years, 34% indicated that all of their partners were primary partners, and 64% said that half or more of their partners were primary partners. Neither does having only one sexual partner necessarily imply intentional fidelity: there may be individuals with a single sexual partner who want to have other partners but have found none available.

A problem with assessing the relationship of number of partners to AIDS risk is that it is usually not known exactly what people do with these partners. For example, a person who has only one partner is at high risk if that partner is likely to be infected, whereas another individual with multiple partners who uses condoms consistently (and effectively) with all partners may not be at high risk. Our data indicate that although people rarely use condoms with primary partners, they are somewhat likely to use condoms with casual partners.

These issues point out the difficulties in conceptualizing and measuring sexually risky behaviors. To truly capture all the dimensions of sexual risk, the researcher must know many things: the number of sexual partners a person has or has had, the relevant characteristics of those partners and their previous partners, and what exactly the person did with each partner. Gathering such a broad array of detailed information is difficult, if not impossible, with survey research because of problems of memory distortion and the unreliability of frequency estimates. Moreover, in representative samples such as the one in this study, only a small number of individuals fall into high risk groups, making statistical inference problematic.

In this sample, overall levels of concern about AIDS, behavior change in response to AIDS, and perceptions of risk for AIDS were low. However, these attitudes, beliefs, and behaviors did vary by respondents' risk behavior. Respondents with more than one partner, compared to those with one partner, reported more fear and worry, ranked their sexual risk as greater, and indicated a higher probability that they were or would be infected with AIDS. Ironically, respondents with multiple partners, even those who did not use condoms consistently, also reported a

larger impact of the AIDS threat on their behavior. The behavior changes that this group made may have been in limiting the number of their sexual partners (cutting down from previously even higher levels), in using condoms more frequently (but still not always), or in the ways in which they chose their partners.

The responses of members of this sample to questions about their fear and worry about AIDS highlight the distinction between the levels of risk that researchers attribute to people and the amount of risk that people attribute to themselves. Various indicators of sexual risk (e.g., number of partners, or more objective indicators such as HIV seropositivity, pregnancy, and having a sexually transmitted disease) may not accurately capture people's own perceptions of their experience. A person who becomes pregnant or contracts a sexually transmitted disease has not necessarily *knowingly* taken a risk, given that contraceptives may fail³² and sexual partners may lie.³³ A person who practices serial monogamy may not *feel* as if his or her behavior is risky, despite public health guidelines about limiting sexual partners. A distinction between behavioral risk indicators and individuals' perceptions of their own risk is important insofar as knowledge of risk, and the concomitant fear or worry, is necessary (but not sufficient) for behavior change.^{34,35} □

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Call for Award Nominations in Demography

Nominations are invited for the 1994 Mindel C. Sheps Award in mathematical demography and demographic methodology. This biennial award is sponsored jointly by the Population Association of America and the School of Public Health of the University of North Carolina. The previous recipients of the award have been Ansley Coale, Nathan Keyfitz, William Brass, Robert Potter, Jane Menken, Ronald Lee, John Bongaarts, Kenneth Wachter, Kenneth Manton, and Joel Cohen. The award, which consists of a certificate and a cash prize, will be made at the next Population Association of America Annual Meeting in spring 1994.

Individuals (or collaborative pairs) should be nominated on the basis of important contributions to knowledge either in the form of a single piece of work or a continuing record of high accomplishment. The award is intended as an honor for an

individual whose future research achievements are likely to continue a past record of excellence, rather than as a tribute to a demographer who is ending an active professional career.

Nominations should include a brief summary of the nominee's work and promise for future contributions, as well as a selective list of positions held, relevant additional biographical information, and principal publications.

The recipient need not be a member of the Population Association of America, nor is eligibility confined to residents or citizens of particular countries. Persons previously nominated are eligible to be nominated again; there are more excellent candidates than can be recipients in any specific year. Nominations should be submitted before January 1, 1994, to Anne R. Pebley, Chair, RAND, 1700 Main St, PO Box 2138, Santa Monica, CA 90407-2138.